

Figure 1: SPC Characterization methods

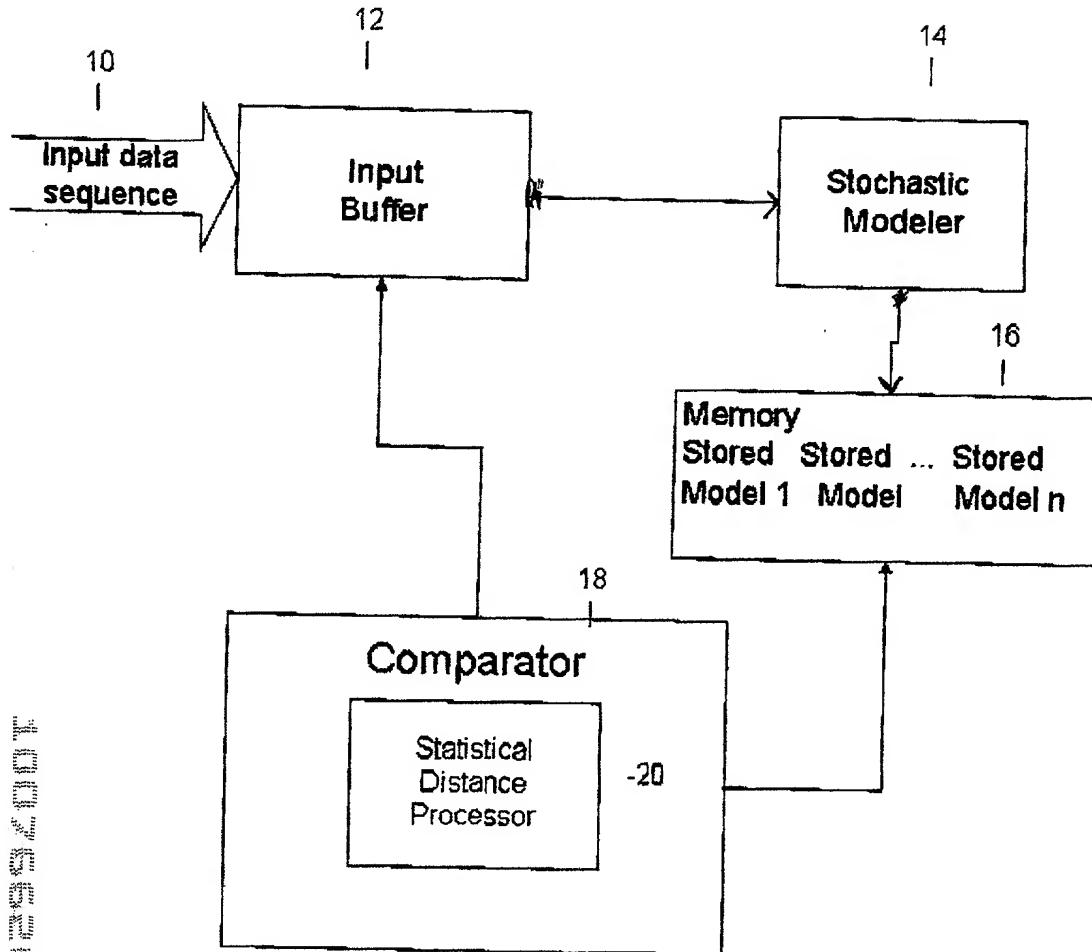


Fig. 2

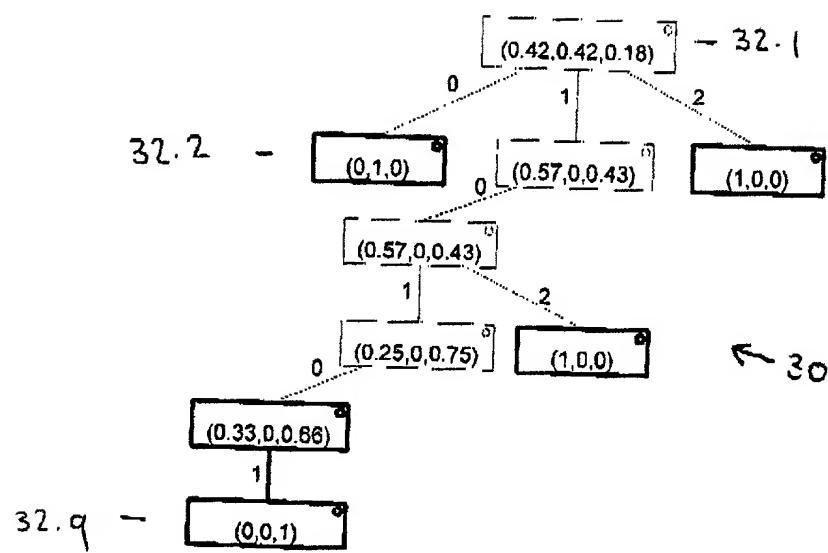


Fig. 3

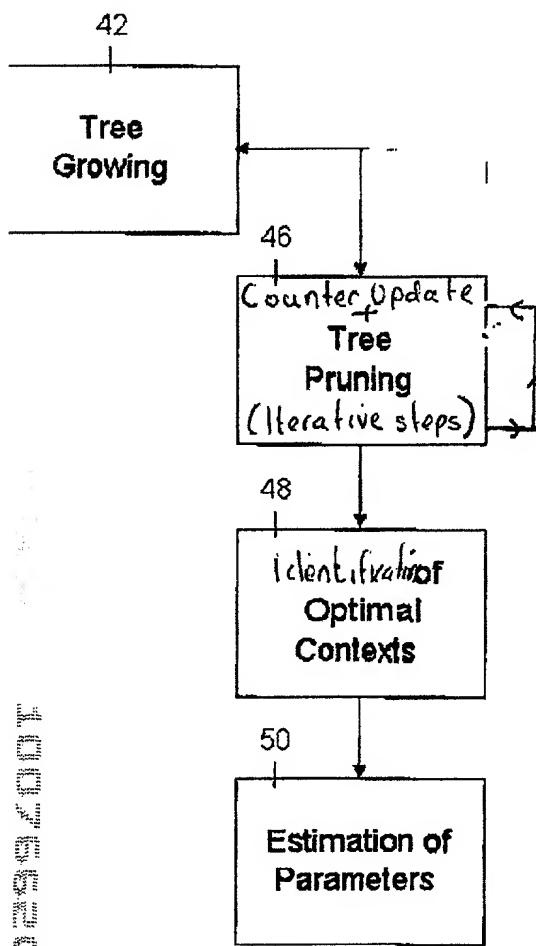


Fig. 4

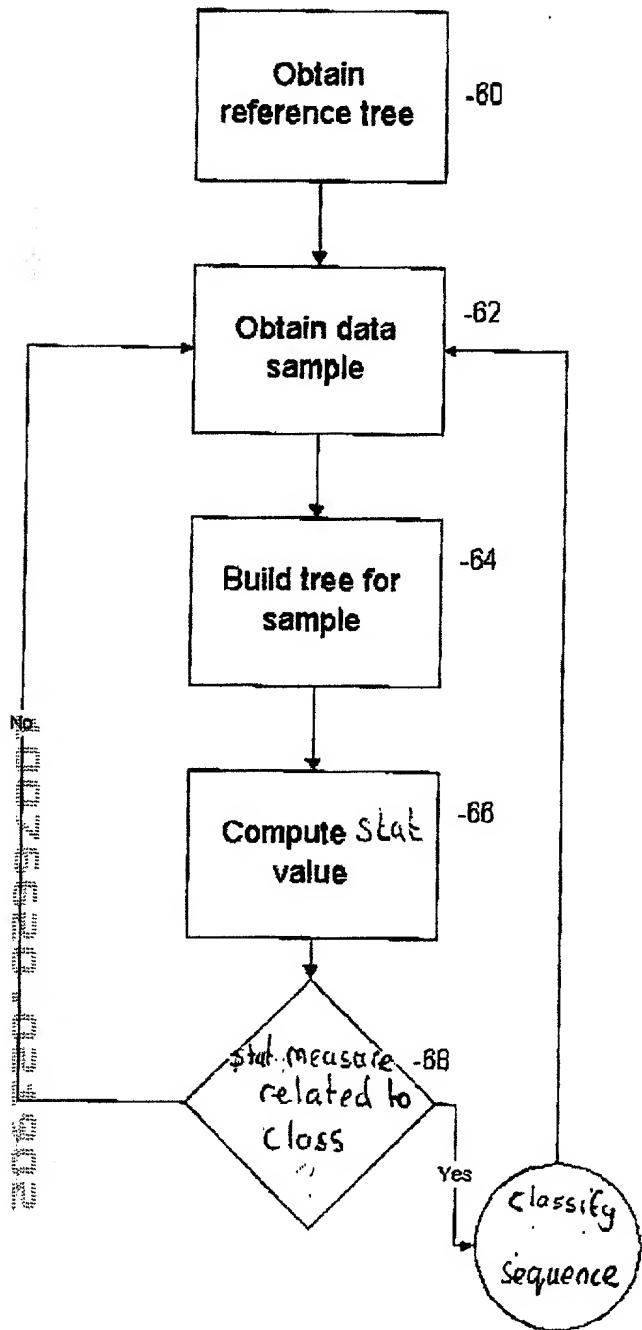


Fig. 5A

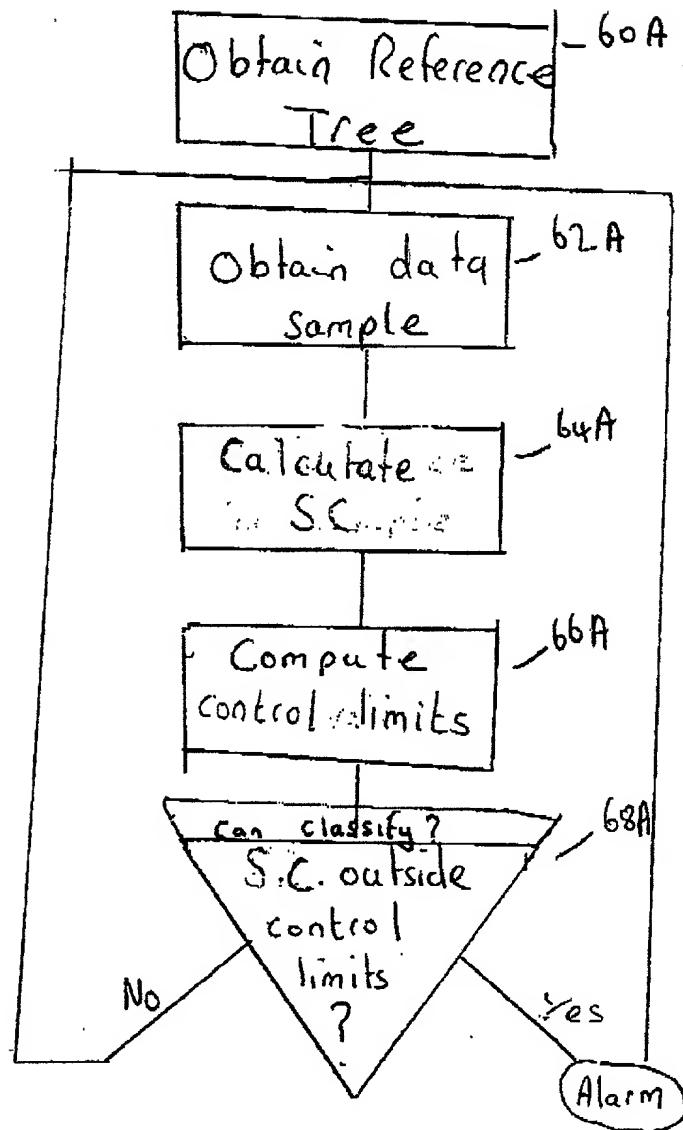


Fig. 5B

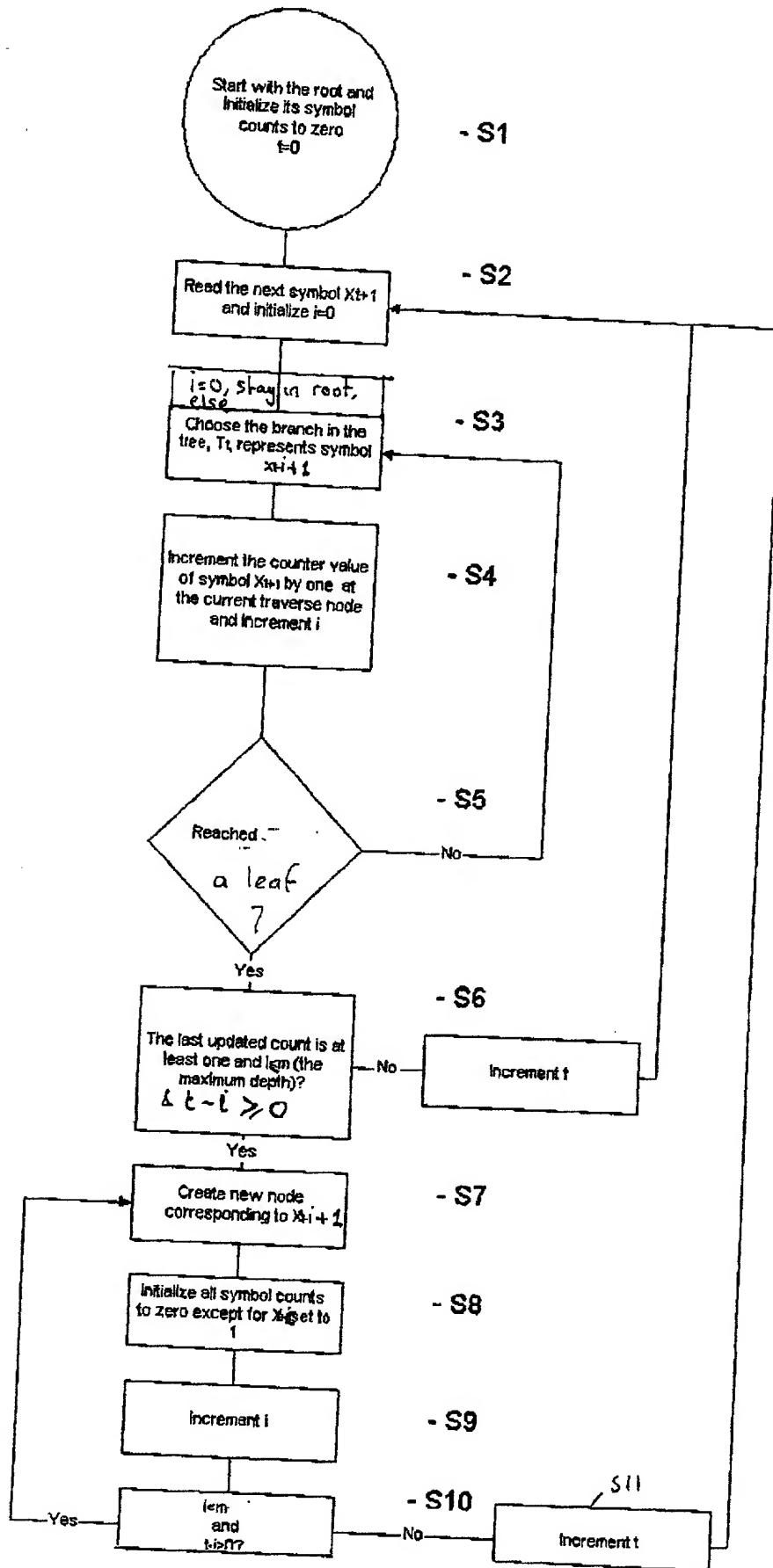


Fig. 6A

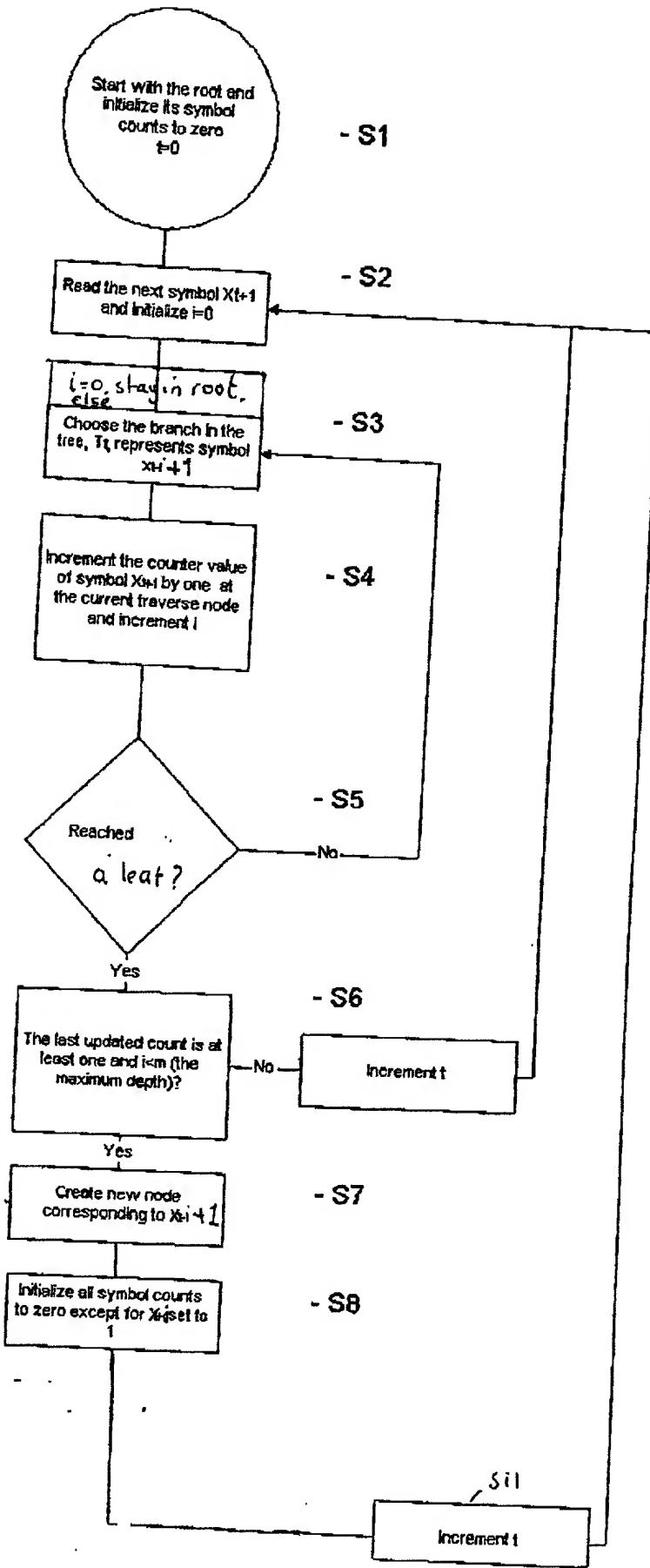
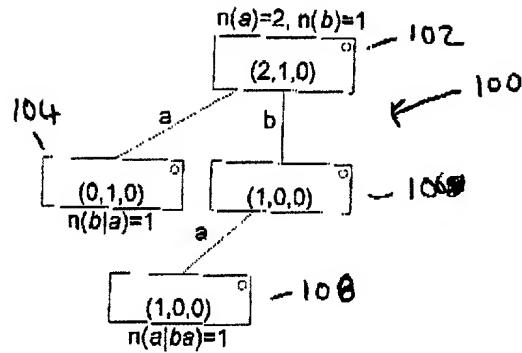
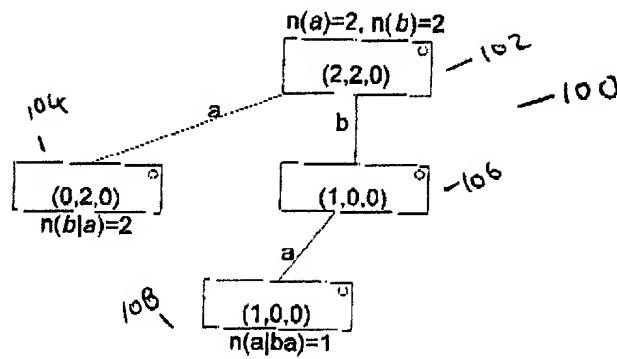


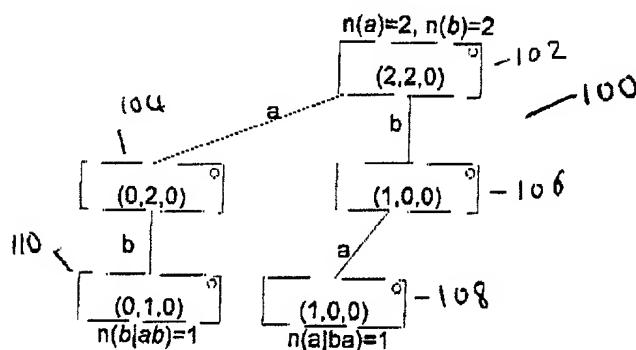
Fig 6B



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Figure A1: the counter context tree constructed from $x_3 = a, b, a$



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Figure A2: the counter context tree constructed from $x^4 = a, b, a, b$ following Step 1.1



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Figure A3: the counter context tree constructed from $x^4 = a, b, a, b$; partial application of Step 1.2

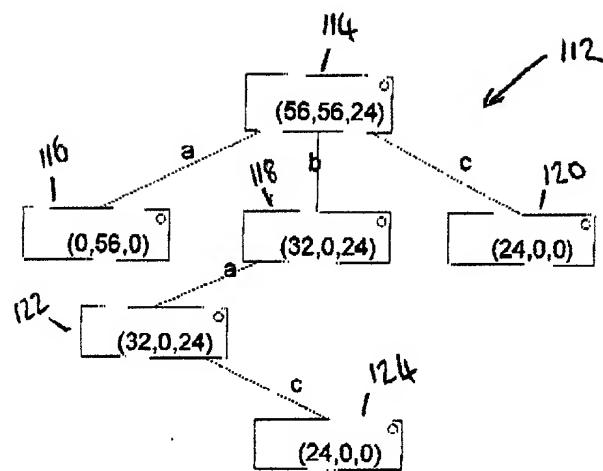


Figure A4: The pruned counter context-tree of the string
(a,b,a,b,c,a,b,a,b,c,a,b,a,b,c) replicated 8 times

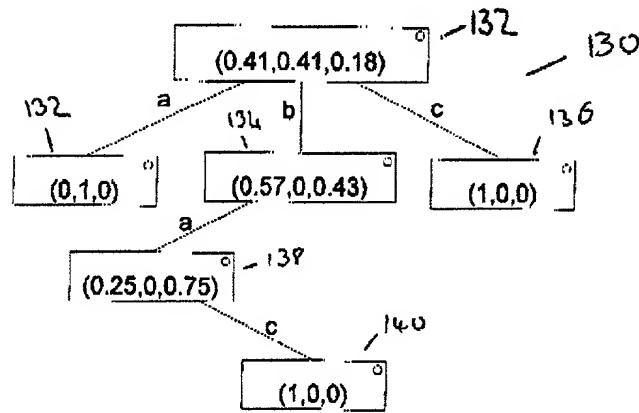
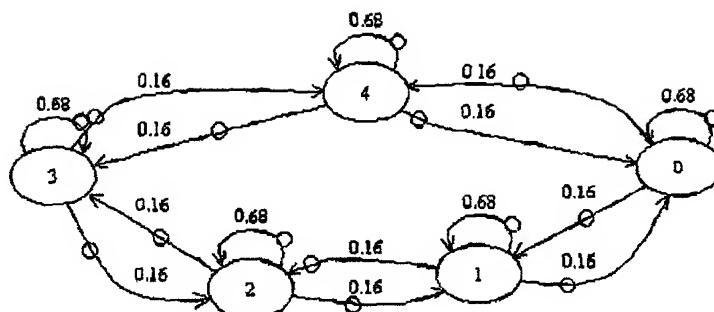


Figure A5: The context tree containing vectors of conditional probabilities $P(x|s)$ as obtained from the counter context-tree in figure A4. Optimal contexts are represented by the bolded frame.



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Figure 6 State transition diagram

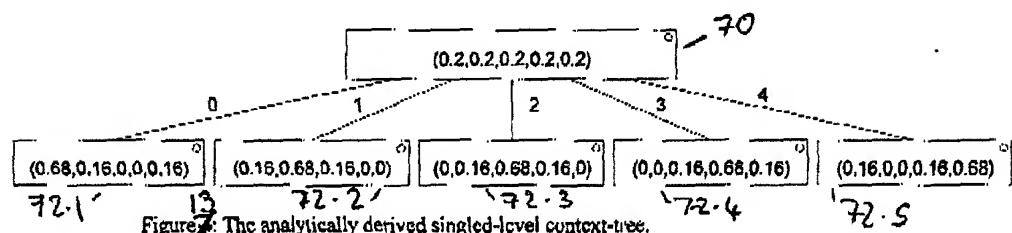
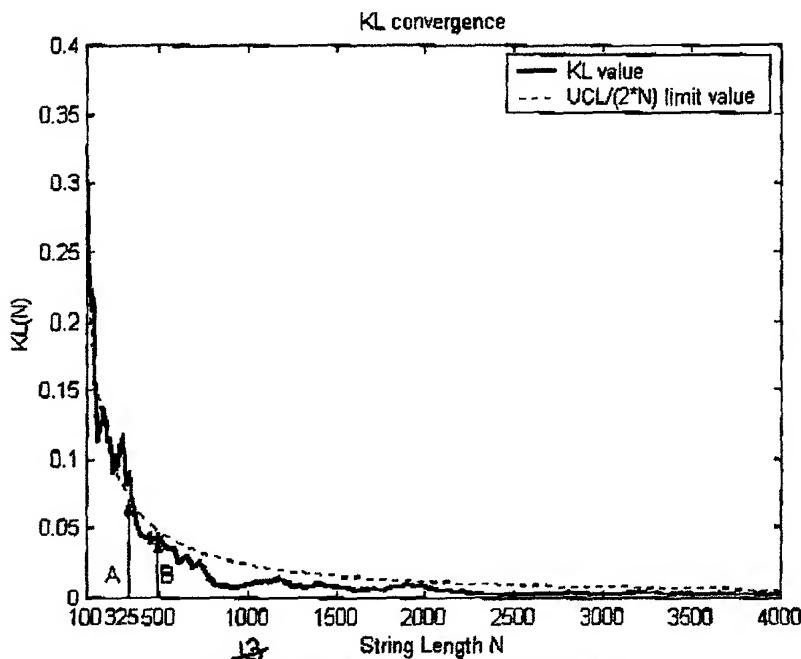


Figure 7 The analytically derived singled-level context-tree.



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Figure 8 KL value in relation to input string length N
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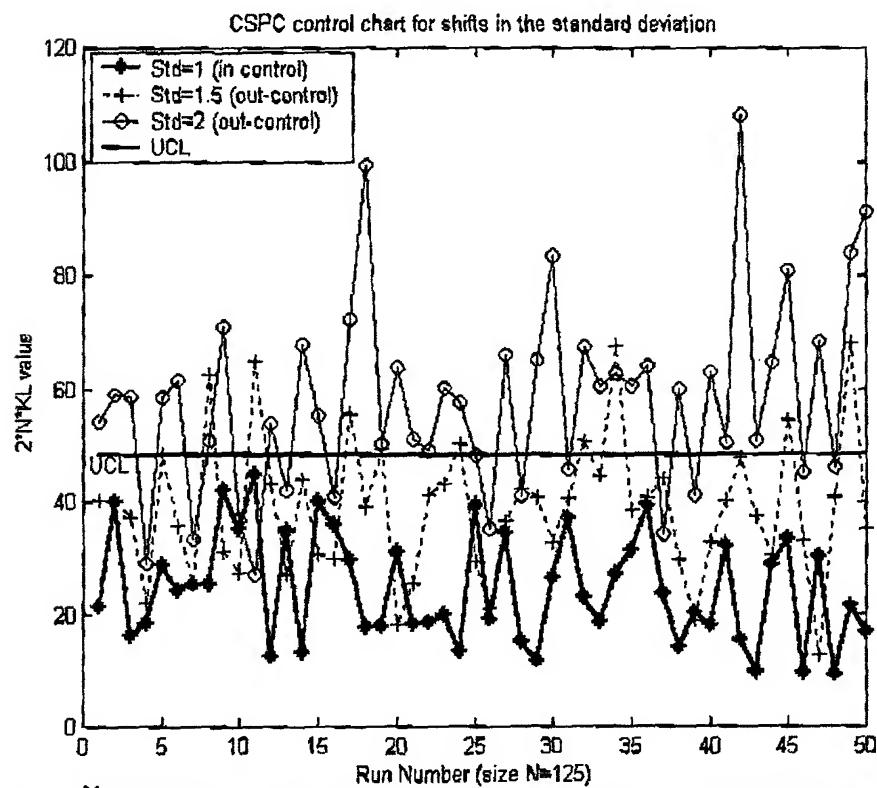
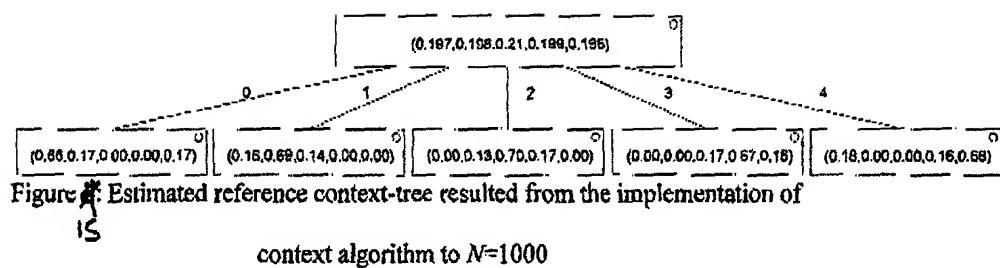
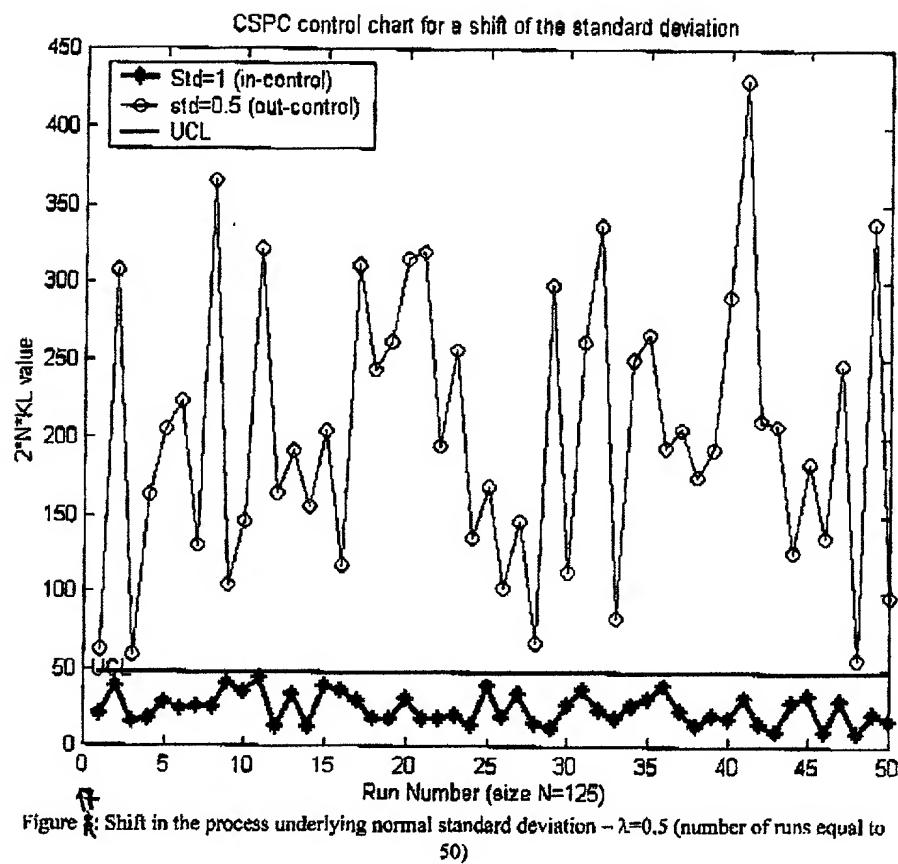
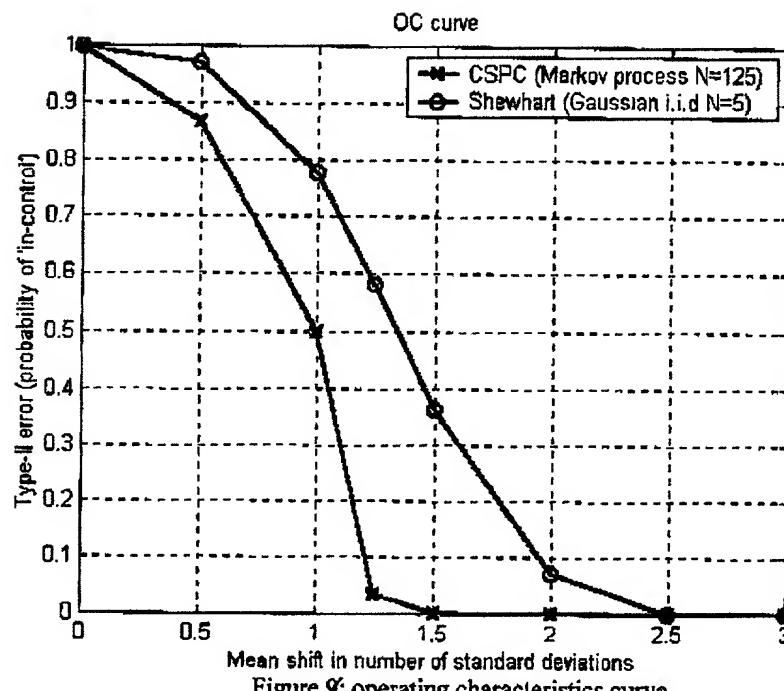


Figure 6: Shifts in the process underlying normal standard deviation - $\lambda=1, 1.5, 2$ (number of runs for each process properties is equal to 50).





ARIMA residual chart (SCC)

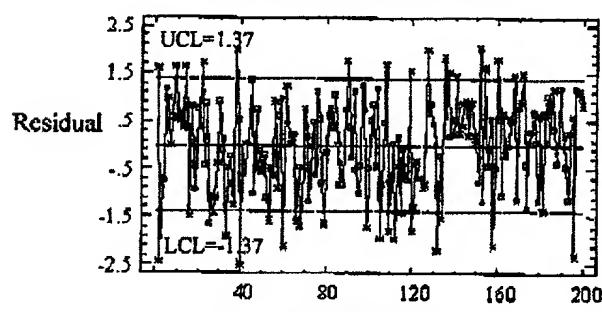


Figure 19: the SCC control chart for 'in-control' data

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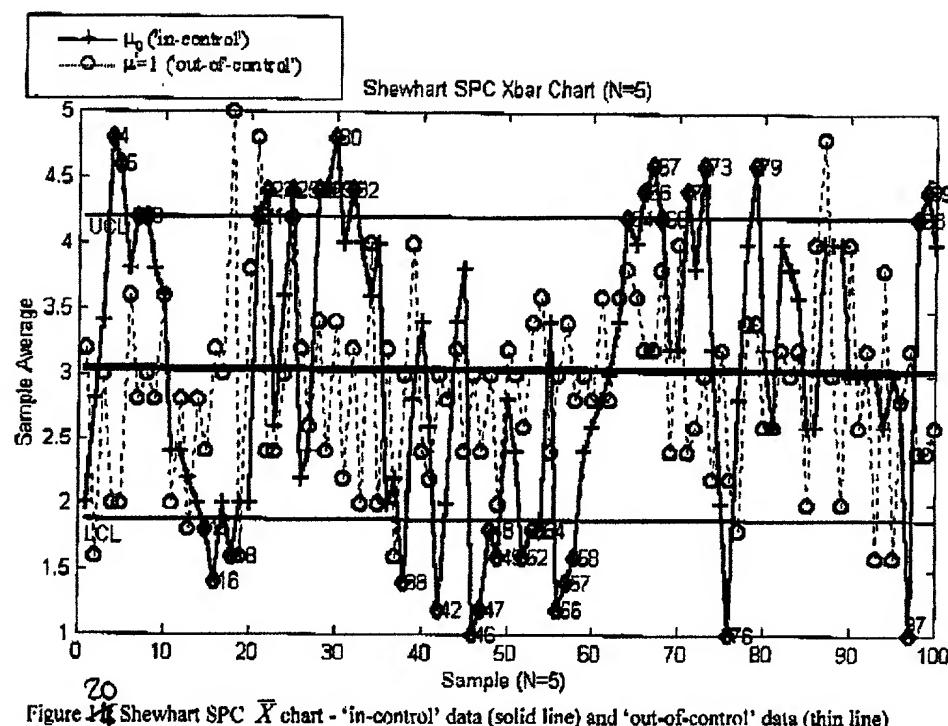
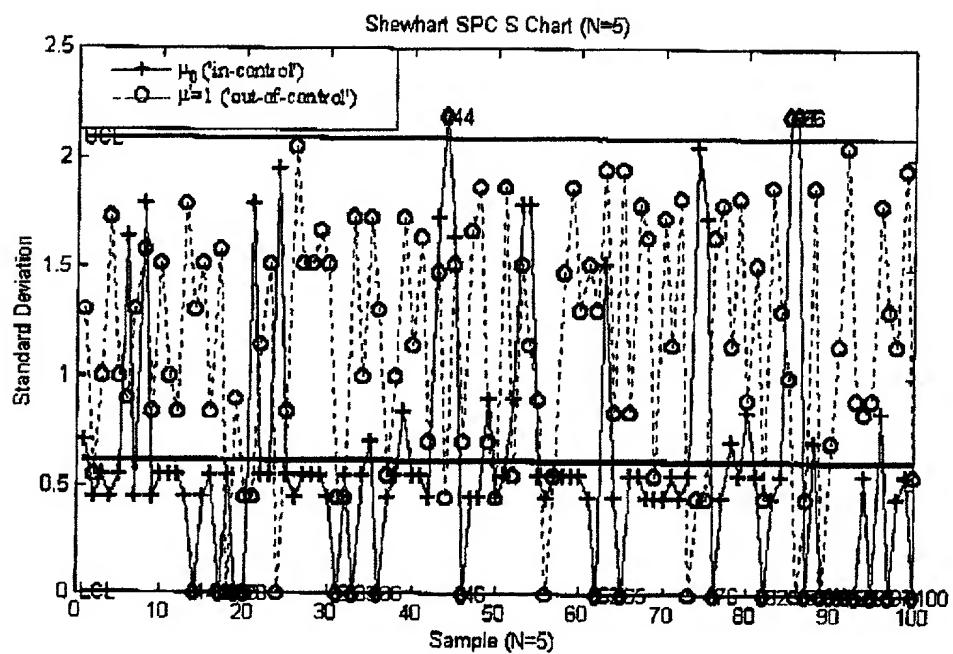
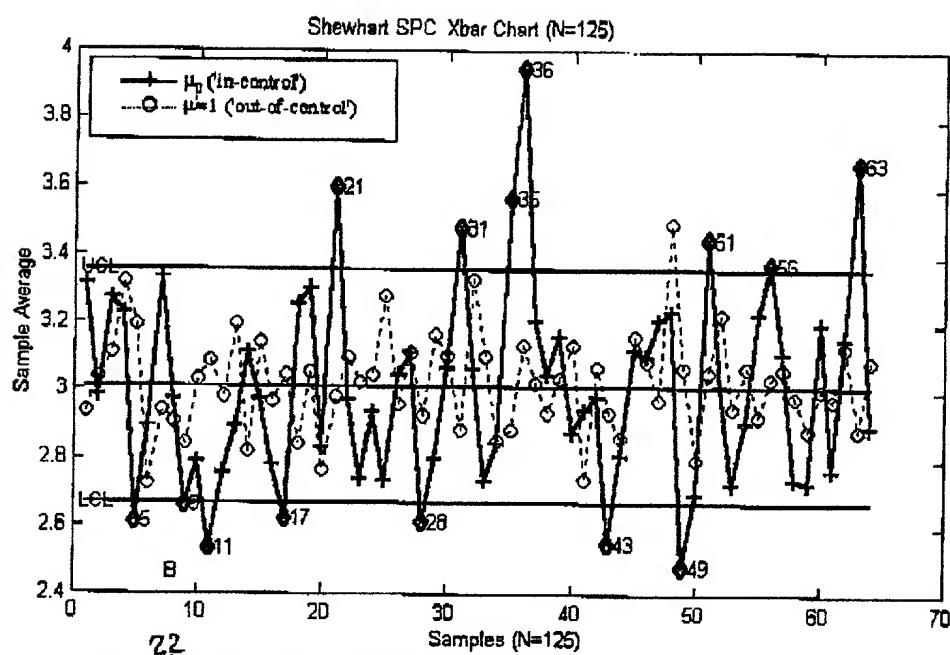


Figure 14 Shewhart SPC \bar{X} chart - 'in-control' data (solid line) and 'out-of-control' data (thin line)



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Figure 15 Shewhart SPC S-chart - 'in-control' data (solid line) and 'out-of-control' data (dashed line)



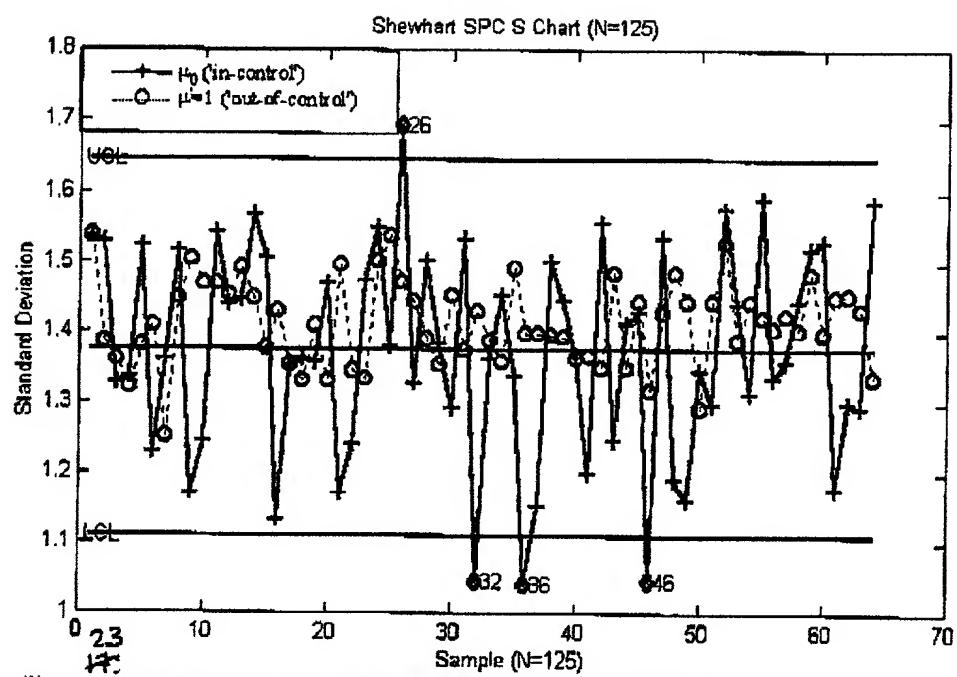


Figure 14: Shewhart SPC S chart for $N=125$ sample 'in-control' data (solid line) and out of control data (dashed line)